No. 8700043

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS S BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Telemark'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D. C. *this* 31st *day of* August *in the year of our Lord one thousand nine hundred and* eighty-eight.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Richard E. Lyng
Secretary of Agriculture

APPROVAL EXPIRES 4-30-85

U.S DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

FORM APPROVED: OMB NO. 0581-0055

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION	3. VARIETY NAME
Nickerson American Plant Breeders Inc.	HS82-288	Telemark

4. ADDRESS *(Street and No. or R.F.D. No., City, State, and Zip Code)*	5. PHONE *(Include area code)*
5201 Johnson Drive Mission, Kansas 66205	(913)384-4949 KS (303)532-3721 CO

FOR OFFICIAL USE ONLY

PVPO NUMBER: 8700043

6. GENUS AND SPECIES NAME	7. FAMILY NAME *(Botanical)*
Triticum aestivum	Gramineae

FILING
DATE: January 2, 1987
TIME: 2:00 ☐ A.M. ☑ P.M.

8. KIND NAME	9. DATE OF DETERMINATION
Hard Red Spring Wheat	1=1982 2=1985

FEES RECEIVED
AMOUNT FOR FILING: $ 1800 00
DATE: December 29, 1986
AMOUNT FOR CERTIFICATE: $ 200 00
DATE: July 26, 1988

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*

Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION	12. DATE OF INCORPORATION
Delaware	January 19, 1983

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

R.E. Heiner
5201 Johnson Drive
Mission, KS 66205
(913)384-4940

OR

R.F. Bruns or C. Bruns
P.O. Box 30
Berthoud, CO 80513
PHONE *(Include area code)*: (303)532-3721

14 CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED

a. ☒ Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
b. ☒ Exhibit B, Novelty Statement.
c. ☒ Exhibit C, Objective Description of Variety *(Request form from Plant Variety Protection Office.)*
d. ☒ Exhibit D, Additional Description of Variety.
e. ☒ Exhibit E, Statement of the Basis of Applicant's Ownership. Exhibit F. Quality and Agronomic Data

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act.)* ☒ Yes *(If "Yes," answer items 16 and 17 below)* ☐ No

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ Yes ☐ No	☒ Foundation ☒ Registered ☒ Certified

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
☐ Yes *(If "Yes," give date:*
☒ No

19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES ?
☐ Yes *(If "Yes," give names of countries and dates)*
☒ No

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT	DATE
Robert Bruns.	12-18-86
SIGNATURE OF APPLICANT	DATE
R E Heiner	12-22-86

FORM WA-470 (7-84) (Edition of 3-84 is obsolete.)

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EXHIBIT A

ORIGIN AND BREEDING HISTORY OF TELEMARK

Telemark originated from the cross 'MN70170/Len' which was made at Berthoud, Colorado in 1979. F2 selections from this cross were advanced in the greenhouse through the F4 generation by single seed descent. The original bulk was from a single F5 head-row selection made at an AgriPro breeding nursery in Hunter, North Dakota in 1981. This bulk was entered into yield trials in 1982 under the experimental number HS82-288. This line has been yield tested in AgriPro nurseries in the Red River Valley from 1982 through 1986. It has been tested in the Northern Uniform Regional Nursery in 1985 and 1986. It has also been tested in North Dakota South Dakota and Minnesota state nurseries in 1986.

There were 296 head-rows grown in Berthoud, CO in 1984 and 280 were selected to produce breeder seed. Approximately 2,250 pounds of breeder seed was produced in Berthoud, CO in 1985.

Telemark is uniform and stable. Less than 1% of the plants were rogued from the foundation fields in 1986. Approximately 90% of the rogued variant plants were 3 to 12 centimeters taller than Telemark. Less than .5% of these total variant plants may be encountered in subsequent generations.

EXHIBIT B

NOVELTY STATEMENT

Telemark is most similar to the hard red spring wheat Marshall. However, it can be distinguished by the following morphological characteristics:

- 75% of Telemark's seeds are collared while Marshall's seeds are not.
- Telemark has an oblique shoulder shape. Marshall is registered as having an elevated shoulder shape. (See Crop Science; vol. 23 Jan./Feb. 1983.)
- Telemark has a strap head shape. Marshall is registered as possessing a fusiform head shape. (See Crop Science; vol. 23 Jan./Feb. 1983.)
- Both Telemark and Marshall have acuminate type beaks. However, Telemark's are significantly longer (see statistical data following page).

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ANOVA TABLE FOR BEAK LENGTH

TELEMARK VERSUS MARSHALL

SOURCE	DF	SS	MS
TOTAL	49	94.680	
VAR	1	43.992	43.99235
ERROR	48	50.688	1.05600

F-TEST = 41.659**
CV = 4.308
LSD = 0.116

MEANS FOR EACH VARIETY
MARSHALL MEAN: 3.748 mm's
TELEMARK MEAN: 5.624 mm's

** The difference in means of beak length are significantly different at the 1% probability level.

These measurements were obtained from greenhouse plants that were in the 10.5 (heading) growth stage.

"Telemark"

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY
WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
Nickerson American Plant Breeders Inc.

ADDRESS (*Street and No. or R.F.D. No., City, State, and ZIP Code*)
5201 Johnson Drive
Mission, KS 66205

FOR OFFICIAL USE ONLY
PVPO NUMBER 8700043
VARIETY NAME OR TEMPORARY DESIGNATION

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:
[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:
[1] 1 = SPRING 2 = WINTER 3 = OTHER (*Specify*) _____
[2] 1 = SOFT 2 = HARD 3 = OTHER (*Specify*) _____

[2] 1 = WHITE 2 = RED 3 = OTHER (*Specify*) _____

3. SEASON - NUMBER OF DAYS FROM [redacted] planting TO:
[0][5][2] FIRST FLOWERING
[0][5][7] LAST FLOWERING

4. MATURITY (*50% Flowering*):
[0][2] NO. OF DAYS *EARLIER* THAN . . . . . [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS
[--][--] NO. OF DAYS *LATER* THAN . . . . . [--] 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Marshall

5. PLANT HEIGHT (*From soil level to top of head*):
[0][7][5] CM. HIGH
[--][--] CM. TALLER THAN . . . . . [--]
[0][4] CM. SHORTER THAN . . . . . [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Marshall

6. PLANT COLOR AT BOOTING (*See reverse*):
[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:
[1] 1 = YELLOW 2 = PURPLE

8. STEM:
[1] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom: 1 = ABSENT 2 = PRESENT
[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT
[1] Internodes: 1 = HOLLOW 2 = SOLID
[0][5] NO. OF NODES (*Originating from node above ground*)
[2][1] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:
[2] Anthocyanin: 1 = ABSENT 2 = PRESENT
[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:
[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER (*Specify*): _____
[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED
[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT
[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT
[1][2] MM. LEAF WIDTH (*First leaf below flag leaf*)
[2][0] CM. LEAF LENGTH (*First leaf below flag leaf*):

FORM GR-470-4 (REVERSE) "Telemark" 8700043

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3=middense

[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[7.5] CM. LENGTH [11] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.)

[2] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[2] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1-2] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = midlong 3 = LONG

[2] Brush: 1 = NOT COLLARED 2 = COLLARED 75% seeds are collared

[--] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[5.4] MM. LENGTH [3.2] MM. WIDTH [38] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[4] STEM RUST (Races) field races [2] LEAF RUST (Races) field races [0] STRIPE RUST (Races) _____ [0] LOOSE SMUT

[0] POWDERY MILDEW [0] BUNT [0] OTHER (Specify) _____

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[0] SAWFLY [0] APHID (Bydv.) [0] GREEN BUG [0] CEREAL LEAF BEETLE

[0] OTHER (Specify) _____

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Marshall	Seed size	Marshall
Leaf size	Marshall	Seed shape	Marshall
Leaf color	Marshall	Coleoptile elongation	Marshall
Leaf carriage	Marshall	Seedling pigmentation	Marshall

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.T. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States. Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Wells, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. See attachment.

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

EXHIBIT D

ADDITIONAL DESCRIPTION OF TELEMARK

Telemark is a hard red spring wheat bred and developed by Nickerson American Plant Breeders Inc.

Telemark is a short semidwarf height variety with excellent straw strength characteristics with medium to early maturity. Milling and baking properties are very good.

Juvenile plant growth habit is semi-erect. Plant color at boot is green with an erect, twisted flag leaf. Head shape is strap, middense, awned and head color is white at maturity. Glumes are midwide and midlong with oblique shoulders and acuminate beaks. Seed shape is oval to ovate with rounded cheeks. Seed crease is narrow and shallow.

Telemark is primarily adapted to the higher yield areas of the upper Midwest.

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EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

Nickerson American Plant Breeders Inc. is the applicant for protection in this case being:

a) The incorporated business (registered in Delaware) for and within which regular employees have bred the named variety.

b) The proprietory owner and intending commercial user of the variety.

EXHIBIT F

QUALITY AND AGRONOMIC DATA

AGRIPRO SEEDS

YEAR: 1986 — HARD RED SPRING WHEAT QUALITY — PAGE 1

			WHEAT--FLOUR QUALITY						BAKING QUALITY									
YEAR	SAMPLE NAME	LOC	TEST WT.	WHT PROT	FLR YLD	FLR PROT	FLR ASH	MIX CURVE	ABS.	MIX TIME	DOUGH CHAR	LOAF VOL	CRUMB GRN	CRUMB TEX	CRUMB COL	MILL SCORE	BAKE SCORE	TOTAL SCORE
			lb/Bu	14%mb	%	14%mb	14%mb	R	%	min	R	cc	R	R	R			
86	TELEMARK	CY	59.3	14.9	69.9	13.9	*0.390*	8	*63.0*	2.5	7	*1000*	7	8	9	*90-A*	*82-B*	172-B
86	TELEMARK	ST	58.6	14.9	73.6	13.6	*0.425*	7	*64.0*	2.3	8	*980*	6	8	8	*90-A*	*80-B*	170-B
86	TELEMARK	CX	56.5	14.5	69.4	13.1	*0.422*	6	*63.0*	3.8	8	*1000+*	7	7	8	*77-C*	*86-B*	163-B
85	HS82-288	ST	58.8	14.3	*71.0*	12.6	*0.334*	9	*66.0*	*3.0*	8	*1000*	8	9	8	*88-B*	*91-A*	179-B
85	HS82-288	HU	57.5	*15.0*	71.6	13.4	*0.392*	7	*65.0*	2.5	7	*1000+*	7	8	8	*85-B*	*86-B*	171-B
85	HS82-288	CX	57.5	14.4	66.9	13.3	*0.372*	8	*66.0*	*3.0*	8	*900*	7	8	8	*79-C*	*85-B*	163-B
85	HS82-288	CY	59.2	14.5	67.8	13.1	*0.330*	7	*64.0*	3.3	8	*970*	7	9	9	*81-B*	*87-B*	168-B
84	HS82-288	SP	61.5	13.8	74.1	12.7	*0.367*	6	*63.0*	3.5	7	*910*	8	8	8	*82-B*	*83-B*	165-B
84	HS82-288	HU	60.3	14.7	73.5	13.3	*0.452*	7	*64.0*	3.5	8	*940*	8	8	9	*90-A*	*87-B*	177-B
84	HS82-288	CY	61.0	14.5	72.3	13.2	*0.368*	7	*67.0*	1.8	7	*900*	8	8	9	*90-A*	*79-C*	169-B
84	HS82-288	CX	61.2	13.7	71.1	12.6	*0.373*	6	*63.0*	4.3	8	*905*	8	8	9	*91-B*	*86-B*	167-B
83	HS82-288	HU	54.0	*15.0*	*69.0*	14.4	*0.000*	7	*65.0*	3.3	8	*1000+*	9	9	9	*78-C*	*93-A*	171-B
83	HS82-288	CX	58.6	*15.0*	*70.5*	13.5	*0.000*	6	*63.0*	3.3	8	*1000+*	8	9	9	*84-B*	*89-B*	173-B
	AVERAGE		58.8	14.6	70.8	13.3	*0.384*	7	64.3	3.1	8	979	8	8	8	85-B	86-B	171-B

GRADES: A=EXCELLENT B=GOOD C=ACCEPTABLE D=QUESTIONABLE F=UNACCEPTABLE
R=RATINGS: 9-10=EXCELLENT 8=GOOD 7=ACCEPTABLE 5-6=QUESTIONABLE 1-4=UNACCEPTABLE

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REGIONAL SUMMARY OF AGRIPRO AND OTHER SELECTED VARIETIES

	Yield - Bu/A								
Variety	84(4)	85(5)	86(4)	3-Year Avg.	% of Wheaton	T.Wt.(14) lbs/bu	Ht.(14) cm	Lodg.(5) 1-9	Head.(15) days
Nordic	71.4	90.6	56.5	74.2	103	61.3	83.4	4.7	59.8
Erik	66.4	87.9	60.7	72.9	101	59.2	81.7	4.8	61.2
Wheaton	68.2	85.4	57.9	72.5	100	58.9	77.9	3.3	58.8
Telemark	67.3	86.7	58.3	72.0	99	59.1	75.0	1.2	58.0
Norseman	68.4	87.1	54.6	71.3	98	58.3	76.1	1.8	59.6
Marshall	65.1	86.3	58.0	71.0	98	59.9	78.9	2.8	59.7
Celtic	64.5	80.3	53.2	67.1	93	60.2	83.4	3.5	57.9
Osio	62.5	82.2	52.4	67.0	92	58.7	78.6	1.5	56.0
2369	65.8	76.9	55.6	66.9	92	59.7	79.3	2.9	58.1
Stoa	65.4	77.7	53.9	66.6	92	59.6	95.6	3.8	57.6
Era	58.8	84.0	52.2	66.5	92	59.6	79.0	5.0	61.0
Len	63.7	77.5	52.3	65.5	90	60.0	82.6	2.4	58.7
Guard	61.2	76.6	51.8	64.2	88	59.4	81.2	2.1	56.4
Butte	57.9	69.9	49.4	59.9	83	60.5	90.6	5.4	55.6

( ) - indicates number of locations